ABSTRACT

A neutron source includes a low atomic number element target that is bombarded by incident energetic particles to provide a neutron flux. The source receives a controlled flow of liquid gallium that cools the target. The energetic particles may be for example protons or deuterons and the target is housed in a moderator/reflector assembly. Advantageously, the liquid gallium provides improved heat transfer, smaller flow rates and reduced stress on the target in comparison to prior art liquid coolants.